IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	
	Confirmation No.: 6751
Takuji GODA et al.	
U.S. Application No.: 09/755,047	Group Art Unit: 1771
Filed: January 8, 2001	Examiner: A.T. Piziali

For: GLASS ARTICLE AND GLASS SUBSTRATE FOR DISPLAY PANEL

Mail Stop **Appeal Brief**
Commissioner for Patents
U.S. Patents and Trademarks Office
Attention: BOARD OF PATENT APPEALS AND INTERFERENCES

June 29, 2007

APPEAL BRIEF (REVISED)

Sir:

In view of the Notification of Non-Compliant Appeal Brief mailed on June 18, 2007, a revised Appeal Brief is hereby submitted.

I. REAL PARTY IN INTEREST

The real party of interest is NIPPON SHEET GLASS CO., LTD., assignee of the application.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

There is a total of 4 claims pending in the application. These claims are identified as claims 8 and 10-12. Claims 8 and 10-12 have been rejected more than twice and currently stand rejected in an office action dated November 20, 2006. The rejection of claims 8 and 10-12 is appealed.

Claims 1-7 and 9 were canceled.

IV. STATUS OF AMENDMENTS

An RCE was filed on October 16, 2006. The claims which were presented as a submission in this RCE have been rejected in a non-final Office Action dated November 20, 2006.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 8 is directed to a glass substrate for a display, comprising: an alkali-containing glass substrate(#1, page 8, line 16 - page 9, line 3); an under layer (#5 - page 12, line 1 - page 13, line 11) for preventing diffusion of alkali ions, deposited on a surface of said alkali-containing glass substrate; a barrier film (#2 - page 9, line 4 - page 10, line 9) comprising mainly at least one of indium oxide and tin oxide, and deposited on the under layer; an insulating film (#3 - page 6, line 16 - page 7, line 12) deposited on the barrier film and having a surface electrical

resistance of from 1.0 x 10^6 Ω/□ to 1.0 x 10^{16} Ω/□ even if the insulating film is heated at 550°C for 1 hour; and an electrode film (#4 - page 13, lines 12-14) for forming a display panel, deposited on the insulating film, the barrier film substantially preventing diffusion of metal ions of the electrode film into the alkali-containing glass substrate.

Independent claim 11 is directed to a glass substrate for a display, comprising: an alkali-containing glass substrate (#1, page 8, line 16 - page 9, line 3); an under layer(#5 - page 12, line 1 - page 13, line 11), disposed on a surface of the alkali-containing glass substrate, for preventing diffusion of alkali ions; a barrier film (#2 - page 9, line 4 - page 10, line 9) disposed on the under layer, the barrier film comprising at least one of indium oxide and tin oxide; an insulating film (#3 - page 6, line 16 - page 7, line 12) disposed on the barrier film, the insulating film having a surface electrical resistance of from 1.0 x 10^6 Ω/□ to 1.0 x 10^{16} Ω/□; and an electrode film (#4 - page 13, lines 12-14) disposed on the insulating film, the electrode film comprising a metal capable of diffusing metal ions therefrom, the barrier film substantially preventing diffusion of the electrode film metal ions into the alkali-containing glass substrate.

In the invention, if the barrier film (2) is directly deposited onto the glass substrate (1), the barrier film may have a porous structure due to alkaline components of the glass substrate. Therefore, the under layer (5) is formed on the glass substrate (page 4, line 20 to page 6, line 12).

The barrier film (2) formed mainly of indium oxide and/or tin oxide is used to prevent diffusion of metal ions contained in the glass substrate or metal layer formed on the glass (page 6, lines 6-12).

In the invention, the insulating film (3) deposited on the barrier film (2) must have a surface electrical resistance kept in a range from 1.0 x 10^6 Ω/□ to 1.0 x 10^{16} Ω/□ even if the insulating

film is heated at 550 °C for 1 hour, to prevent leak current and electrification of the substrate (page 10, line 10 to page 11, line 5).

Finally, the electrode film (4) is formed on the insulating film (3). In the invention, the electrode film is deposited on the substrate through the barrier film. Thus, although the glass substrate contains alkali components, metal ions contained in the electrode film do not substantially diffuse into the glass substrate to thereby prevent the stain due to the metal ions. Especially, in the invention, even in the PDP manufacturing process, the diffusion of metal ions can be efficiently prevented.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. The first ground of rejection to be review is the rejection of claims 8 and 11 under 35 USC § 103(a) as being patentable over McCurdy et al. in view of Zieba et al.

B. The second ground of rejection to be reviewed is the rejection of claims 8 and 10-12 as being unpatentable over McCurdy et al., in view of Zieba et al. and further in view of Nothe.

C. The third ground of rejection to be reviewed is the rejection of claims 8 and 10-12 as being unpatentable over McCurdy et al. in view of Zieba et al. and further in view of Ishikawa et al.

VII. ARGUMENT

First, it appears that the rejection of claims 8 and 11 require the teachings of Nothe and Ishikawa et al. respectively in the second and third rejections. This would suggest that the combination of McCurdy et al. and Zieba et al. in the first rejection is insufficient to establish a *prima facie* case. In other words, if the teachings of McCurdy et al. and Zeiba et al. are sufficient to render claims 8 and 11 obvious, why do the

second and third rejections each require a further reference? While it appears that the second and third rejections should be limited to claims 10 and 12 respectively, the rejections as currently expressed do not state this.

A. First Ground of Rejection

A reversal of the rejections of claims 8 and 11 under 35 USC § 103(a) as being unpatentable over McCurdy et al. in view of Zieba et al., is requested.

In this rejection, the claimed electrode film is alleged to "correspond" to the conductive coating which is used in McCurdy et al. However, this coating is disclosed at column 4, lines 44-65 as follows:

> Alternatively, a **conductive coating** may also be applied in an anti-reflective coating stack in conjunction with the coating of the present invention. **A conductive coating would enhance the utilization of the anti-reflective film by enabling the coated article to dissipate static charges** that can build up on computer **monitor screens**. The conductive coating is **generally applied onto the antimony/tin oxide alloy** prior to applying the metal oxide coating.
>
> Conventional conductive coatings generally recognized within the art may be suitable for use in the present invention. **Conductive metal oxide suitable for use with the invention include compounds selected from the group consisting of indium oxide doped with tin, indium oxide doped with fluorine, tin oxide doped with fluorine, tin oxide doped with**

> **antimony (less than 5, and typically 1 to 2 atomic weight percent antimony), zinc oxide doped with aluminum, zinc oxide doped with fluorine, zinc oxide doped with boron, and tungsten oxide doped with fluorine.** The conductive metal oxide is applied at a thickness of about 200 angstroms to about 5000 angstroms. **Preferred conductive coatings include tin oxide doped with fluorine and indium oxide doped** with tin. (Emphasis added)

In the "Response to Arguments" - page 8 of the Office Action dated November 20, 2006, the Examiner has made it clear that he is confusing the §102 and §103 statutes. That is to say, the Examiner's position is that "If the prior art structure is capable of performing the intended use, then it "meets" the claim." This "meets the claims" misses the point that under § 103 it is the hypothetical person of ordinary skill who must, in accordance with the § 103 statute, glean this meaning from the disclosure and misses the point that the hypothetical person of ordinary skill is not permitted to be privy to the claims. Basically, the Examiner's position is that any layer that is conductive, is an electrode layer. The Examiner has not provided a reference which shows that the hypothetical person of ordinary skill would deem anything film that is conductive is an electrode layer.

It is submitted that the hypothetical person of ordinary skill is not going to recognize the McCurdy et al. conductive layer as being an electrode layer *per se* let alone an electrode layer for forming a display panel as required by the claims. It is clear that the use of "electrode" imports meaning beyond that of just a conductive layer or film. Indeed, at the very least, Merriam-Webster Online Dictionary defines "electrode" as: a

conductor used to establish electrical contact with a nonmetallic part of a circuit.

However, this is merely a dictionary definition and attention is called to MPEP 2173.02 Clarity and Precision [R-3], wherein it is stated that:

> . . . claim language must be analyzed, not in a vacuum, but in light of:
>
> (A) The content of the **particular application disclosure;**
>
> (B) The teachings of the prior art; and
>
> (C) The **claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art** at the time the invention was made. (Emphasis added)

and further that:

> The test for definiteness under 35 U.S.C. 112, second paragraph, is whether "**those skilled in the art would understand what is claimed when the claim is read in light of the specification.**" *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). (Emphasis added)

It is therefore advanced that the McCurdy et al. reference fails to disclose at least one of the claimed elements. A conductive oxide layer which is capable of discharging static charges neither discloses nor suggests an electrode layer in the manner which will be understood by a person of skill in the art when taken in light of the disclosure. Attention is called to

MPEP 2111 which indicates that during patent examination, the pending claims must be "given the broadest reasonable interpretation **consistent with the specification.**" (Emphasis added)

Attention is also again had to the fact that the rejection is not made under § 102 but under § 103 which demands that the understanding of the hypothetical person of ordinary skill be the yardstick that is used.

A further shortcoming of this reference resides in the citation of Zieba et al. More specifically, the Zieba et al. reference is applied because the rejection recognizes that McCurdy et al. does not specifically state that the conductive coating is to be deposited on the SiO_2 film - see the paragraph spanning pages 3 and 4 of the Office Action. However, the absence of teachings do not negate the teachings which are in fact found in McCurdy et al.

More specifically, McCurdy et al. discloses (as noted above) that the conductive coating is **generally applied onto the antimony/tin oxide alloy** prior to applying the metal oxide coating - wherein the metal oxide coating is the SiO_2 film. Thus, there is guidance for the hypothetical person of ordinary skill to form the conductive coating on the layer formed of antimony/tin alloy oxide and in position which is not only different from that which is claimed but in a position which would be recognized by the hypothetical person of ordinary skill as being impractical for an "electrode" layer.

That is to say, note should be had to the fact that tin oxide doped with antimony is disclosed at column 4, lines 57-58, as being one example of a conductive coating - and that forming a tin oxide layer which is doped with antimony, on an antimony/tin oxide

alloy layer, is hardly the way to form an electrode layer in a manner that the electrode layer could provide any electrode/controlling function.

That is to say, one would not be inclined to form electrodes in the art to which the claimed subject matter is directed, on a surface which is itself conductive and which will therefore short circuit the electrode function.

A further shortcoming in this rejection resides in that the Examiner has on page 10 of this Office Action, stated that McCurdy et al. "does not specifically state that the conductive coating is to be disposed on the SiO_2 film" (emphasis added). True - but this is what is not disclosed and this is therefore not a reason to ignore what is in fact disclosed. What a reference does not "specifically" teach is not available for rejection under either of § 102, 103.

What McCurdy et al. do teach is that the disclosed layers are selected to induce destructive interference between multiple reflections. That is to say McCurdy et al. discloses at column 1, lines 43-53 that:

> Anti-reflective coatings on glass are utilized to reduce the surface reflection of optical components and to reduce the reflectance of an interface between optical media with different refractive indices. The reduction of visible reflection is achieved by the principle of optical interference. When light impinges on the air-film, film-film, and film-glass interfaces, a portion of the beam is reflected at each interface. **By proper choice of thin film materials and thicknesses, the individual**

> **reflected light beams can destructively interfere thereby reducing the observed visual reflectance.** (Emphasis added)

Therefore, the composition and thickness of the layers in McCurdy et al. are of importance for the sake of destructive interference of reflected rays and any thought of an arbitrary repositioning of same would have to be tempered with the concern that the desired interference would not be achieved.

To further support the rejection based on what is not disclosed in McCurdy et al., Zieba et al. is cited to suggest the disposition of a conductive coating on the exterior of an article. Indeed, column 7, lines 8 - 22 of Zieba et al. discloses:

> It is also **preferred** to deposit an **electrically conducting layer**, which may also function as the antireflective coating, **on the front viewing surface** of the device to **provide static discharge.**

However, as McCurdy et al. already discloses an antireflection coating arrangement which has a conductive layer, it will be immediately self-evident that this antireflection layer must also be on the exterior of a display (viz., a glass substrate) or the like, in order to provide any "antireflective" function. It is therefore submitted that teachings of the Zieba et al. reference would amount to nothing more than a redundant suggestion to put an antireflection layer in the same location.

The Examiner's position (page 9 center paragraph) that McCurdy discloses that the antireflective coating works "just fine" while position in the interior of the article, is not well taken. Why bother with antireflection if an outer layer which

covers it, has already caused a reflection? Column 4, lines 11-65 of McCurdy does not support this position.

The tenor of the rejection is such as to suggest that Zieba et al. was possibly cited to suggest that the tin oxide layer, which is doped with antimony, and the antimony/tin oxide alloy layer, should not be disposed (solely for the sake of rejection) in the position which is preferred by McCurdy et al. but in a separated manner. Nevertheless, this citation backfires in that, as noted above, both McCurdy et al. and Zieba et al. both disclose anti-reflection coatings, both disclose static discharge arrangements and both dispose these layers on the external surface of a glass substrate. The position that the hypothetical person would be inclined to reposition a layer within the antireflection layer arrangement disclosed in McCurdy et al. in light of the teachings of Zieba et al., is therefore totally without merit.

In a nutshell, McCurdy et al. provides an antireflective layer on the external face of a glass substrate. Zieba et al. does the very same thing. The redundancy of the teachings are self-evident as is the fact that these references are not going to establish a *prima facie* case of obviousness in the manner purported in this rejection.

The best possible result which might evolve from the proposed combination of references, would be that the antireflective coatings of McCurdy et al. could be used as the antireflective coating disclosed in Zieba et al. since the teachings of Zieba et al. are not going to be considered by the hypothetical person of ordinary skill for a rearrangement of the layers in McCurdy et al. nor convert the static discharge layer into an electrode film as claimed and disclosed. Nevertheless, this would appear to merely convert McCurdy et al. back into itself.

In connection with the last paragraph on page 4 of the Office Action dated November 20, 2006, it appears that the Examiner is attempting, quite improperly, to bluff and import product-by-process restrictions into the rejection. The claims are combination claims, and no production steps are recited. The position taken in this paragraph is totally improper. Further, the case cited in the last two lines is not correct. 195 USPQ 431 (CCPA 1977) relates to *In re Driscoll*.

B) Second/third Grounds of Rejection

The rejections of claims 8 and 10-12 as being unpatentable over McCurdy et al. and Zieba et al., taken respectively with Nothe (paragraph #5) or Ishikawa (paragraph #6) all suffer from the fatal flaws outlined above, and are all summarily traversed on at least these grounds. As noted *supra*, it would appear that these rejections should only be directed to claims 10 and 12, respectively. Nevertheless, at this time it must be assumed that Nothe and Ishikawa are necessary for the rejection of the independent claims 8 and 11, and that this, as noted above, moots the rejection based on McCurdy et al. and Zeiba et al. alone.

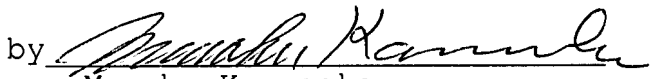
Namely, Nothe and Ishikawa do not disclose the subject as disclosed in claims 8 and 10, or rectify the deficiencies of McCurdy et al and Zieba et al. Therefore, claims 8 and 10-12 are not obvious based on McCurdy et al. and Zieba in view of Nothe and Ishikawa.

Conclusion

In conclusion, the Examiner has failed to establish a *prima facie* case of obviousness for at least the reasons advanced above. A reversal of all rejection is therefore respectfully requested,

If for any reason this Appeal Brief is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned, Applicant's attorney of record.

Respectfully submitted,

by 

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VIII. CLAIMS APPENDIX

8. A glass substrate for a display, comprising:

an alkali-containing glass substrate;

an under layer for preventing diffusion of alkali ions, deposited on a surface of said alkali-containing glass substrate;

a barrier film comprising mainly at least one of indium oxide and tin oxide, and deposited on the under layer;

an insulating film deposited on the barrier film and having a surface electrical resistance of from 1.0×10^6 Ω/□ to 1.0×10^{16} Ω/□ even if the insulating film is heated at 550°C for 1 hour; and

an electrode film for forming a display panel, deposited on the insulating film, the barrier film substantially preventing diffusion of metal ions of the electrode film into the alkali-containing glass substrate.

10. A glass substrate as claimed in claim 8, wherein the electrode film comprises at least one metal selected from the group consisting of silver, copper, and gold.

11. A glass substrate for a display, comprising:

an alkali-containing glass substrate;

an under layer, disposed on a surface of the alkali-containing glass substrate, for preventing diffusion of alkali ions;

a barrier film disposed on the under layer, the barrier film comprising at least one of indium oxide and tin oxide;

an insulating film disposed on the barrier film, the insulating film having a surface electrical resistance of from 1.0×10^6 Ω/□ to 1.0×10^{16} Ω/□; and

an electrode film disposed on the insulating film, the electrode film comprising a metal capable of diffusing metal ions

therefrom, the barrier film substantially preventing diffusion of the electrode film metal ions into the alkali-containing glass substrate.

12. A glass substrate as claimed in claim 11, wherein the electrode film metal is at least one selected from the group consisting of silver, copper, and gold.

IX. EVIDENCE APPENDIX

NONE

X. RELATED PROCEEDINGS APPENDIX

NONE - There are no related proceedings